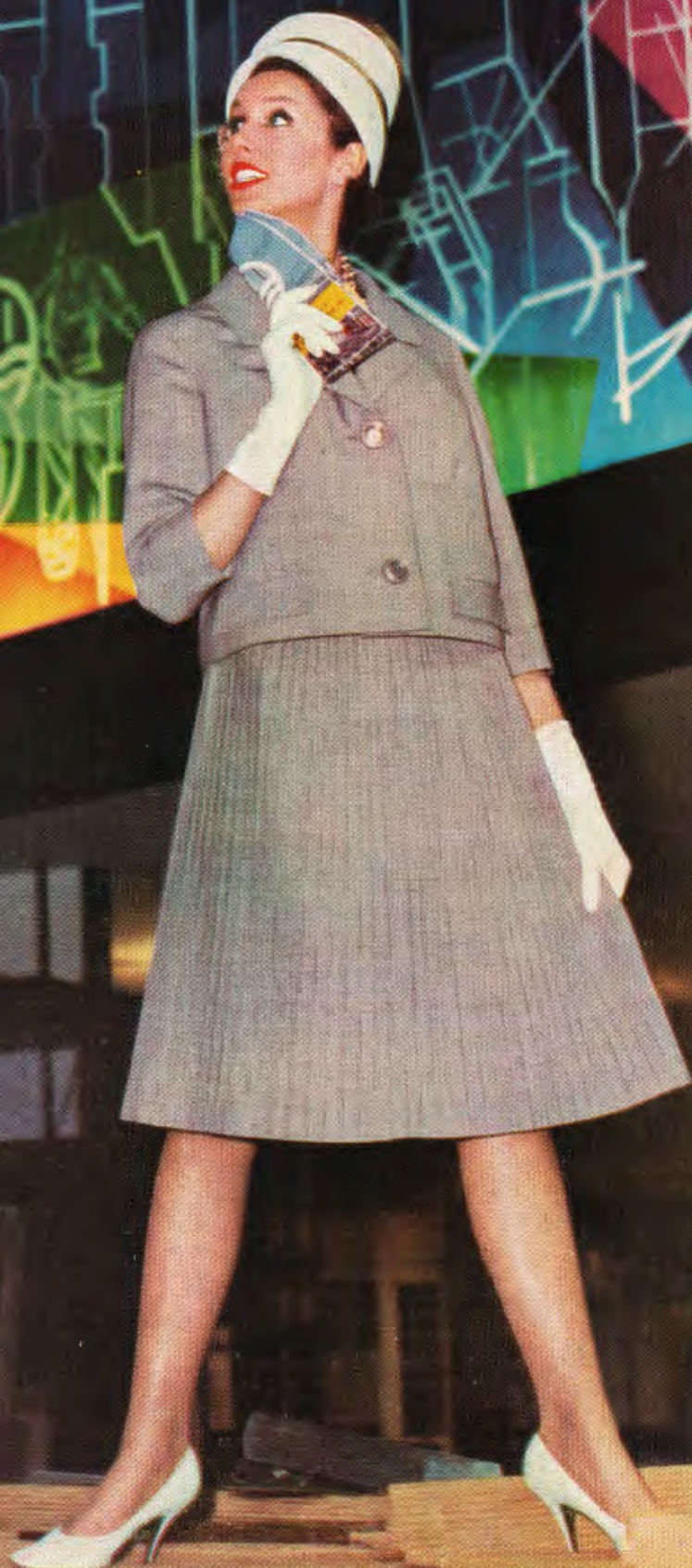




Magazine

MAY 1961



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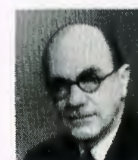
Contributors



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John Maytime describes himself as a middle-aged, optimistic student of human nature whose hobby is attendance at the Old Bailey. Under another name he is an author of detective stories and articles on wine and food. He has been described (all too accurately) as an all-round man. He is at present engaged on compiling a definitive anthology of prose and poetry on boxing, due to be published in 1964.



Michael Perrin, who reviews R. W. Clark's book "The Birth of the Bomb" is chairman of the Wellcome Foundation Ltd. Before the war he was a member of the Alkali Division Research Department which he joined after post graduate research at Toronto and Amsterdam Universities. In 1942 he was seconded as assistant director of the tube alloys Directorate (cover name for British atomic energy activities), and from 1946 to 1951 he was deputy controller, Atomic Energy (Technical Policy) at the Ministry of Supply.



Graham Strickland is a member of the Technical Services Department at Fernhurst. He joined ICI on the agricultural side at Jealott's Hill Research Station in 1938 after six years in New Zealand farming and with the State forestry organisation. He moved to Fernhurst in 1953 to take charge of home technical service matters. Hobbies he lists as golf, gardening and motoring.

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FRONT COVER: Preview for Moscow—The ICI stand under construction. Photo by Vala



POINT of VIEW

AWAY FROM IT ALL

By Mark Abrams

I SPENT the third week of April in Switzerland taking part in an international meeting to discuss the travel industry and the tourist trade. There were approximately one hundred participants, and they came from places as far apart as Moscow and Mexico, Helsinki and Honolulu. The interests they represented were as various as hotel keepers and manufacturers of aeroplanes, steamship lines and publishers of guide books.

Very little imagination was needed to accept the proposition that helping people to take holidays is one of the world's largest and most rapidly growing businesses. In some countries, for example Switzerland, Italy and Austria, the national economy would be in a highly critical condition if it were not for the money earned by looking after foreigners. Again, some countries, for example the United States and Germany, are such heavy users of other people's holiday facilities that changes in the vacation fashions of their citizens can materially affect the prosperity of dozens of nations.

I TURNED up at the conference reasonably well aware of these general aspects of the tourist trade. But as I listened to the reports from one country after another I became increasingly aware of one aspect of particular interest to this country. It would seem that in most countries the past decade has seen a considerable increase in the proportion of people

taking a holiday away from home. The one outstanding exception to this trend is apparently Great Britain. Ten years ago slightly over 50% of all adults in Great Britain took a holiday away from home. In 1960, after a decade of steadily rising prosperity all round, the proportion had increased to no more than 58%.

MOREOVER, after allowance has been made for the fall in the value of money, the average British holidaymaker spent less on holidays in 1960 than in 1951. Some idea of the modesty of our vacation activities can be obtained by considering some American figures. As long ago as 1949 nearly two-thirds of all families in the United States were taking away-from-home holidays, and, what is even more striking, most of these families were taking two vacation trips a year.

Our own stagnation is all the more surprising when one considers the many factors that should encourage holiday-taking by British people. For example, we are a very highly urbanised nation, and therefore one would expect a widespread and urgent desire for a few days' relaxation away from home. Again, the number of people with cars has been going up rapidly every year, and owning a car makes it easier to get away. Again, we have greatly increased the proportion of people who have had some higher education, and this should have led to more inquisitiveness about the outside

world. The average real standard of living has gone up by roughly 25% over the past ten years, and this new affluence should have made it possible for many more people to afford holidays. But in fact very little expansion has taken place, in spite of all these "generating factors." What are the reasons for this? Some undoubtedly are economic, but there are also psychological reasons.

There are various ways of learning about the general temperament of the people in any particular country; for example, the student can observe their political behaviour or examine their educational system.

BUT perhaps the most revealing guide to a nation's temperament is to look at the way its people set about enjoying themselves when they are given more opportunities for leisure. By and large, the reaction of the British people to these circumstances is to stay at home. Not for them the challenge, excitement and shock of coping (or failing to cope) with new experiences, new places and new people. This all seems to be part of a much wider caution and conservatism that runs throughout the economy. We shall know that Britain is ready to catch up with its economic competitors when we find that our own young people, when it comes to taking holidays, are launching out as young people already are in France, Germany, Italy, and indeed most other countries.

The opinions expressed in this article are not necessarily those of the Company

ADVENTURE in TRAINING

By John Maytime

A new—and rather inspiring—approach to the training of process workers is under way at the Hillhouse Works of Plastics Division. Here boys of 18 are given a unique opportunity for fuller development as human beings. They are taught the job, taught the scientific background and spend organised weekends in the Lake District.

In the vicinity of Plastics Division's Hillhouse Works near Blackpool you will find a good answer. There they have developed a youth training scheme which is equally as attractive as an apprenticeship, in fact in many respects better. The scheme, being only two years old, is not bound by ancient traditions. It is a training scheme unique in industry, and it is not too much to suggest that it is a prototype that should be studied by all employers and school leavers.

Most of the youths in the scheme are recruited from secondary modern schools, but there is a sprinkling from other schools too. About eight boys are engaged each year, and at present there are 21 undergoing training. The scheme is for three years' training followed by two years' operational work on shifts. The three-year training is twofold: first in the works, where a number of semi-skilled jobs are learned; and secondly character-building activities outside the works.

The scheme is not expensive, as it does not demand an elaborate or expensive training school. The result is a direct cost to the Company of a very few hundred pounds per man—well worth it when, in the end, you have a youth who is competent, confident, and maturing rapidly as a result of the challenges and opportunities offered him.

In charge of this scheme is Stan Buglass—himself an ICI employee since leaving school. Until eighteen months ago he was employed at Billingham Division,

where he was trained as an engineer before joining the Education Department.

Such is the background. But how does the scheme work? First the youths have to be good enough to be selected as trainees. This means they undergo tests to assess their intelligence and also the degree to which they have applied it. From the test results at least two candidates for each vacancy are interviewed. This is done by a panel consisting of a section manager, a plant manager and the youth training officer.

Let us suppose a youth has proved himself fit to be one of the chosen. What lies in store for him, and where can it all lead? Perhaps we should answer the latter question first, because it must be appreciated that this training scheme is not devised to produce a corps d'élite. The lads are chosen not as stars of their generation, but as sound average chaps. They are trained to develop character and powers of leadership so that they may become in due course first-rate supervisors—chargehands or foremen. If, of course, they are found later to possess exceptional gifts, the way ahead lies open to them; but skilled operator is the immediate target aimed at, with the better youths achieving supervisor rank.

And so, with selection accomplished and target in the sights, the youth enters the Plastics Division.

Ahead of him lies industrial training and character training for three years. The trainee spends his first year learning (in spells of four weeks apiece) every available suitable job. In the second year switches are less frequent—he learns to become a member of a production team and spends up to four months on each section of the works. In the third year an individual programme fits him for shift work at 18½.



If you are an average youth of 15-16 and on leaving school you have failed to get an apprenticeship—disaster! Adults and friends have impressed on you that without an apprenticeship there is no future in life. At an age beset with many problems of growing into a man you are at the crossroads—to work with society or drift away from it. Given the right encouragement you will more easily become a useful and happy member of society. But where is the encouragement and opportunity?



SELECTION

First you complete selection tests. Then if successful you are interviewed by a Plant Management panel



LECTURES

General information about the Company is given in the lecture room



COLLEGE

Theory of chemical plant operation is studied at Blackpool Technical College



LEISURE

Open-air weekends are part of the scheme. These boys have all gained Duke of Edinburgh awards

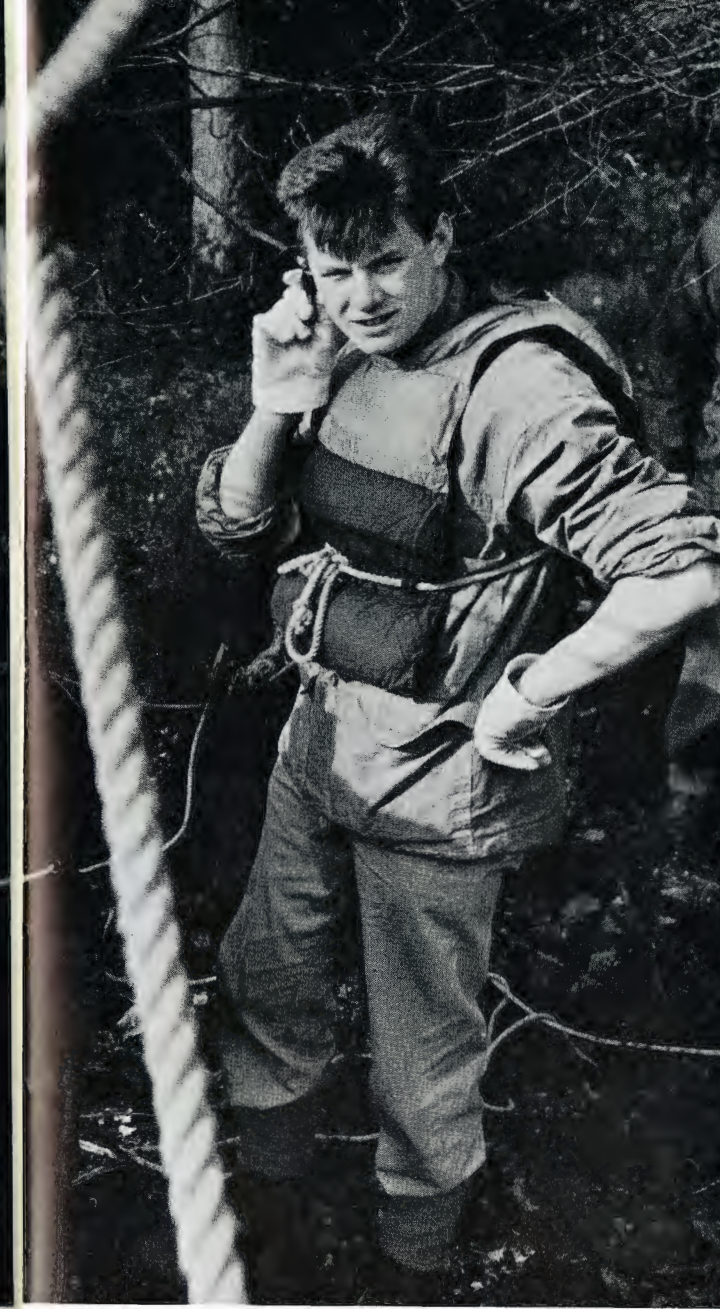
LAKELAND ACTIVITIES



Roger Spencer takes the lead on a rock climb in the Langdales



Pulling together to tighten a rope



bridge crossing 30 yards of water



At Lakeside Camp the group discusses with the training staff an arduous expedition over the fells



Dinghy sailing on Lake Windermere



Physical education is given for an hour each week in



preparation for a strenuous time in the Lake District



A Kon-Tiki type expedition being carried out

LEARNING TO MAKE IT AT THE WORKS

Half-day Release

Technical education for a City and Guilds qualification is undertaken at Blackpool Technical College on a half-day release and one evening per week. Physical training is given for an hour per week under a qualified instructor. There is also general education for half a day per week to help the trainee to understand the complexities of modern industry and the functions of the Plastics Division in particular.

Thence to the outdoor activities, to the days and nights in the Lake District, where the young man learns everything that the toughest of campers needs to know, from felling trees to building a raft, canoeing, sailing, rock-climbing, map-making—even down to weather lore.

This is carried out at the YMCA training camp on Lake Windermere, where on a compulsory annual two weeks' course and during (optional) weekend courses—up to seven or eight a year—they master outdoor crafts under the expert tuition of the YMCA staff. This Lake District activity is, naturally, the most dramatic and spectacular part of the training.

Prince Philip's Scheme

One of the highlights of the training scheme is the participation in the Duke of Edinburgh Award Scheme, planned as a challenge to personal achievement and as a guide to organisations concerned with the development of future citizens. An award—gold, silver or bronze badge—is earned when a youth qualifies in one activity from each of four groups: *rescue and public service training*—first aid, lifesaving, home nursing; *expeditions*, completed over a set route in unfamiliar country where initiative and self-reliance are needed; *pursuits*—purposeful or creative activities calling for the initiative and perseverance required to develop natural aptitude; and *fitness*, proved in athletics, swimming, and other physical activities.

I have seen the trainees on the job at Lakeside completing a ropes obstacle course based on Commando training and, I think, formidable enough to challenge any public schoolboy champion gymnast; crossing from island to mainland by rope bridge; engaged on rescue work on a cliff face 150 ft. high (at least 40 ft. of it sheer, and the rest at an angle of 80°); and taking part in a three-day and two-night mountaineering expedition over unknown country. To observe such a programme is to recognise what fine potential material is the average youth of Britain—so often, when unguided, to be found in the dock at police courts.

Yes, I saw the young trainees at full stretch at Lakeside, but it was at Hillhouse Works that I first met them on the job.

Two of them were holders of the Duke of Edinburgh Silver Award: **Roger Wright** and **David Hulme**. Both are exceptions to the general run of the intake in that they happen to be grammar school boys. Roger, from Baines Grammar School, has passes in six GCE subjects; which, by the by, is not an accomplishment insisted on by the training scheme's selection board. Roger finds the training in the Lake District the most exciting part of the course, and speaks nonchalantly of four-day marches over 50 miles of mountain country without money in his pocket, buckling down to cook

his team's meals en route. He has learned the value of teamwork on these expeditions, and those who have been with him appreciate his gifts as a leader. When I saw him at Windermere, the other youths had picked him as leader on a 35 mile march over three days and two nights, which he had insisted on making despite a foot injury.

Target Ahead

Roger would like to work for ICI overseas, and when asked what he wants to do with his life replies confidently "Become a foreman—at least."

David Hulme, the other holder of the silver award, comes from Salford Grammar School and didn't get a GCE. Aged 18, he was about to become a shift worker when I saw him, which means that his pay will rise from about £6 10s. to between £10 and £11 a week. He is an interesting exception to most of the trainees because he likes the industrial training best of all.

It is disappointing to learn that neither of the silver award holders is attempting to win the Duke of Edinburgh Gold Award. One reason is that, due to the fact that the training scheme is only in its third year, both youths have had much less than the average time to get as far as they have, and are perhaps somewhat exhausted with the concentrated effort. Both give lack of time as their reason for not attempting to go further; Wright plays inside left for his club football team and has also recently taken up badminton.

One of the two holders of bronze badges is **Brian Greenwood**, whom I first met working on an autoclave (a sort of industrial pressure cooker, it was explained). He should qualify for the silver award this year and hopes to go on to the gold—he will be a very sensible youth if he does. He looks forward to working at an approved school this year as part of his general training. The love of his life at the moment is deep-sea fishing.

Finally there is **Roger Spencer**, a 17-year-old holder of the bronze badge, due to qualify for his silver award about April. He comes from Lytham St. Anne's, and left Ansdell Secondary Modern School (without GCE) at 15 to join ICI. What appeals to him about the training is its variety. He likes the outside interests best—his hobby is rock-climbing—but is impressed with the value of the industrial training too. His present plan is to persevere towards his gold award when he gets his silver. It's a good plan and in line with his ambition to get ahead as far as he possibly can.

Regional Training

A famous prayer in time of need ran "Give us the tools, and we will finish the job." Today, facing the industrial struggle that lies ahead and on which our national survival depends, manpower is as vital a need as the weapons of war were twenty years back. The Youth Training Scheme of the Plastics Division at Hillhouse is an attempt to make the very most of average manpower endowed with potential gifts of leadership and a feeling for teamwork. Those who accept this training and undergo its rigours—and, take my word for it, they *are* rigours—must emerge better equipped than most for the struggle that lies ahead. That is why this small scheme shines like a good deed in an apathetic world: a beacon to youth, and perhaps a lodestar to those in charge of the men of the future whose courses have yet to be set.

18-year-old David Hulme combs nylon monofilament for the tufting of brushes.

Roger Wright checks the diameter of 'Alkathene' tube with a micrometer.

Volumetric analysis of works' products is a delicate laboratory task.

Keith Mottershaw records hourly readings on a control panel for 'Corvic' driers.

Brian Greenwood operates a valve on a pressure vessel for making 'Corvic'.

Roger Spencer cuts 'Darvic' sheet to size on a band saw.

THREAT TO KARIBA

Contributed by African Explosives and Chemical Industries Limited

Water cabbage and sedges are spreading alarmingly on the vast Kariba Lake which feeds the huge hydro-electric scheme of the Rhodesian Federation. The search is now on to find a non-toxic herbicide which will keep fishing grounds clear and harbours open.

KARIBA, the largest man-made lake in the world, is slowly filling up; but alas, all is not well there. As the water slowly rises and covers existing vegetation, large and small yellowish-green patches can be observed which are steadily increasing in size. If unchecked, they will become a threat to fishing and navigation on the lake.

This menace is a weed known as *salvinia auriculata*, which floats on top of the water and multiplies at an alarming rate. As it spreads, it prevents normal oxygenation of the water, with the result that fish life is in peril. But that is not all. Secondary infestations of weeds are growing on the *salvinia* such as *pistia* and *scirpus cubensis*. The former looks much like the Nile cabbage, which is a weed of importance in Egypt, while the latter is a sedge or water grass. It has long, stringy roots which quickly foul

the propellers of motor boats, and appears to be difficult to control with chemical weedkillers.

At present it is estimated that 150 square miles out of a total area of 1,160 square miles are covered with *salvinia* and associated plants. What is immediately needed is a non-toxic herbicide to keep the lake's fishing grounds clear and communication channels and harbours open.

These areas, large in size, are situated on both sides of the lake, and when the lake has filled, in about four years' time it is expected that a lucrative fishing industry will be established on the shores. If, however, the *salvinia*, water cabbage and sedges spread at the present alarming rate, so congesting these fishing areas, one of the aims of building the lake will be nullified. For this reason the Federal Government is requesting help from all sides in an attempt to control this menace before it reaches impossible proportions.



Walking on the waters of Lake Kariba. An African "boat boy" stands on a two-mile wide strip of sedge, where the water is between 20 and 30 ft. deep

AE & CI (Rhodesia), an associate company of ICI, were approached to see whether they could advise on this problem. Minutes were sent to Head Office asking for technical information on weedkillers suitable for the control of *salvinia*, but this problem was new to Head Office, who put out feelers to many parts of the world to see whether a chemical was known that could control this weed.

Last autumn I was one of a group of experts from AE & CI who inspected the Kariba dam waters in a 50 ft. launch. It was not long before we encountered the *salvinia*, and all that could be seen lying ahead was a large, yellowish-green mass which seemed to extend for miles and miles, broken occasionally by the several trees which are still above water level. These trees protect the *salvinia* by preventing wave action.

Our first impressions as the launch entered into the *salvinia* was that it looked as though it was not very thick and most probably could be controlled with a contact weedkiller, but we had much more to see. As we progressed deeper and deeper into this mass of weeds the *salvinia* became thicker and thicker. In parts it has been unable to expand laterally and therefore has grown upwards, forming a mat several inches in depth.

Soon the water of the lake was no longer visible and we were entirely surrounded by dense weed growth. As the nose of the launch cut into the *salvinia* the weed closed together again within two or three feet of our stern. Suddenly the launch came to a dead stop, the weeds ahead becoming so thick that further progress was impossible, the long sedge roots having wound themselves round the propeller.

While the propeller was being cleared, one of the launch boys was asked to walk on top of a sedge island. Most of us had heard about the miracle of walking on water, and this was certainly an unexpected experience for us to see—an African walking on the waters of Lake Kariba.

Faced with the problem of several commercial firms offering various weedkillers for evaluation, the Federal Government, very wisely we feel, has appointed a neutral party in Messrs. Union Weedkiller Services to test products which might be suitable for the eradication of this weed. It is the intention to bulldoze 150-300 small ponds above the shoreline of the growing lake. These ponds will be stocked with all forms of weed present in the lake, and fish will also be introduced into the ponds for observation purposes.

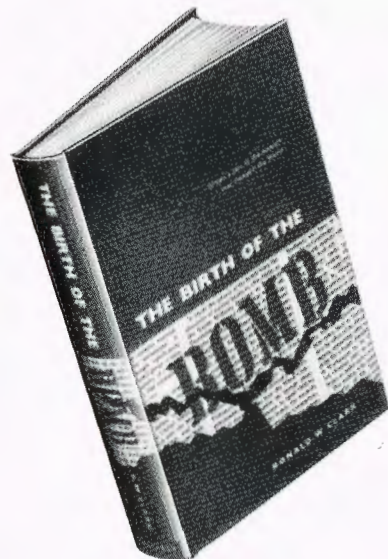
Union Weedkiller Services will have a full-time man carrying out such trials, and we will now work closely with this firm to ensure that our products are compared with others offered by competitors.

We have every confidence that one of our weedkillers will be selected, should the answer lie in chemical warfare. The AE & CI organisation will then once more be playing a role in the future of Lake Kariba.



ABOVE: The launch cuts its way through salvinia. The path of the boat's previous trip is just visible. The *salvinia* in this area is about 8 in. thick. **BELOW: Salvinia weed spreading into open water**





EVEN those who feel that too much has already been written and spoken about the large-scale release of nuclear energy and its first practical application in the atomic bomb will find some new information and a fresh approach in the latest book on the subject, by R. W. Clark, which he has called *The Birth of the Bomb*. He is, as the title implies, chiefly concerned with the origins of the story and has emphasised the contribution from Britain, during the first months of 1939 and the early years of the war, up to the time when the practical realisation of the project and the greater part of the immense technological effort that it needed passed, as it had to pass in the circumstances, to the United States.

Mr. Clark has written his book with the outlook and ability of a populariser of science and a journalist, and has therefore been able to dramatise events and personalities; though this has, admittedly, sometimes led to exaggeration and to repetition which may at times irritate the scientific expert or the professional historian. But, as Sir George Thomson has said in the preface, he has taken great trouble to secure accuracy, and, from my own experience, I know how difficult it is to get a consistent view of events which depend on the memories of individuals who were so deeply concerned as long as twenty years ago.

In time, doubtless, authoritative and detailed histories will be compiled when all the relevant documents can be made available, but by then it is more than likely that the personal glosses and the unwritten enthusiasms and prejudices, which often lay behind the formal decisions, will not be available.

Reference to this problem is particularly relevant in the light of current arguments arising from Sir Charles Snow's lectures at Harvard on the place of the scientist in Government. And, incidentally, Sir Charles himself, then editor of *Discovery*, contributed a popular article on the possibilities of a nuclear weapon to its issue of September 1939.

But, returning to the story of atomic energy, there are many who will agree with the view, expressed by the late Lord Waverley (Sir John Anderson) and quoted by Mr. Clark, that "this is not a mere development of something already known. It is something quite outside all human experience; and this is only the beginning."

In that context Mr. Clark has done more than tell a dramatic story. He has presented a reasoned explanation of the way in which news of the initial discovery of nuclear fission by Hahn and Strassmann in Berlin in December 1938 and the immediate recognition of its physical significance by Frisch in discussions with Meitner in Gothenburg and with Bohr in Copenhagen were spread and followed up by academic scientists in Britain, France,



and the birth of the atom bomb

M. W. Perrin, at one time a research scientist in ICI and actively concerned in the development of the atom bomb during the war, here reviews "The Birth of the Bomb" by R. W. Clark and in particular the part played by ICI.

Germany, the United States and, as is now known, in Russia. From the beginning some of the physicists could appreciate, however dimly, the practical and military significance of this knowledge, but it was naturally much more difficult to explain its extraordinary novelty to those in government or in administrative authority.

Wartime Priorities

During 1939 the world was living in the shadow of coming war, and after September efforts had to be concentrated on its immediate problems of defence and offence. This made it still more difficult to see how work on nuclear fission could properly be fitted into any national programme. The effort which was being devoted to radar, in Britain particularly, had already drawn in the majority of the physicists in the universities who would have been most competent to advance knowledge in this other new field, and Mr. Clark has explained very clearly the reason why so much was therefore left to those who had come to this and other countries as refugees in the years after Hitler's accession to power in Germany; many of them, at the outbreak of war, were still technically aliens. The difficulties which this, at first, added to their work on a project which was recognised as being of the utmost secrecy were to some extent compensated by their clearer recognition of the danger that the atomic bomb might first be made in Nazi Germany.

There are, too, chapters in *The Birth of the Bomb* which will be of special interest to readers of the *Magazine*,

giving, as they do, new information about the contributions to the project which were made by individual members of the staff and by many different Divisions in the Company.

Very soon after the start of work in this country, and increasingly as the first official MAUD Committee, under the chairmanship of Sir George Thomson, organised small-scale experimental work up to the stage when they could report that it would seem possible to make a bomb from U235 (the raw fissile isotope of uranium), it was natural that help should be sought from ICI.

The First Phase

During this first phase of the project almost everything depended on small groups of university scientists who could devise and carry out the critical experiments to test their theories. But these experiments involved materials and techniques that were at the time little more than textbook curiosities, including the preparation of pure metallic uranium itself and a volatile compound, uranium hexafluoride, whose use seemed to offer the only chance of enabling the isotopes to be separated in significant quantities. Heavy water was also recognised as being of great potential importance. The French physicists Halban and Kowarski had brought to England with them in 1940 the world's stock of this material, which had been acquired, under dramatic circumstances, from the Norsk-Hydro factory in Norway just before the German invasion. The possibility of further production was clearly a matter for discussion with ICI.

Individual contacts were therefore made, with as little background information being given in each case as was possible, and it was in this way that I came to know about the project at the beginning of 1941, when I was with Dr. R. E. Slade in the Company's Research Department in Head Office.

By the summer of 1942, when the MAUD Committee's final report was prepared, the individual activities in ICI laboratories had been co-ordinated and extended in scale. The Chairman and some members of the Main Board, including the late Sir Wallace Akers, had also been brought into the picture, and the Company was deeply concerned with the general policy for the project in the future.

It is easy now to see how impracticable was the suggestion that the Government might agree to leave the industrial development of atomic power to the Company on suitable terms while retaining full responsibility for the military applications, in which ICI would give what ever help it could during the war. But the fact that this policy was seriously discussed at the highest levels, and that an industrial appreciation of the problem was thus added to that of the academic group, undoubtedly influenced the Prime Minister's decision to set up a special organisation in DSIR under the direct Ministerial responsibility of Sir John Anderson. This was the Directorate of Tube Alloys, of which Akers took charge in October 1942 and to which I was also seconded from ICI as Assistant Director. Miss Mayne came with us as confidential secretary and soon became the friend and adviser to the many who visited the small office in Old Queen Street with their widely assorted problems.

Mr. Clark's book purposely does not describe in detail the activities of this second phase of the project in which ICI and other firms played a much larger part in the planning and development of full-scale processes and plants based on the earlier research. This is a separate story which must some day be written and which involves the negotiations with the United States and the arrangements which were finally put into effect by the terms of the Quebec Agreement of August 1943.

However, enough has been said in this book to make it clear that progress and achievement did not come from a logical sequence of steps which had been carefully considered and planned in advance but, as usual, from chance happenings and strongly held personal opinions which were often divergent. This is perhaps the most important lesson to be learned from *The Birth of the Bomb*, which can be recommended to anyone interested in the underlying motives behind such an epoch-making story.

ICI MEN WHO PLAYED A PART



SIR WALLACE AKERS



Mr. M. J. S. CLAPHAM



Mr. M. W. PERRIN



Mr. S. S. SMITH

THE SILENT REVOLUTION

By S. P. Chambers, Chairman of ICI

A silent revolution in world industry and trade has taken place. The United States now has a balance of payments problem, West Germany has risen spectacularly, Britain is still anxious. Why should this be so, and where is it leading?

This article is based on a broadcast talk given recently by Mr. Chambers in Australia

CHANGES are taking place in world trade and in the industries of the world which will have profound consequences for a number of countries, including Australia.

To explain what I mean I must go back a little.

Just after the war, Europe, from Britain in the west to Russia in the east, was exhausted. How exhausted I learned from my experiences as the British Chief of Finance in Germany, which had no exports except a mere trickle of coal to France: her people were starving. In Britain we had strict food rationing and a great shortage of consumer goods of all kinds; we remember with gratitude the food parcels from Australia and other countries. The capital equipment of our peacetime industries had been allowed to run down, and some of it was rather obsolete. By contrast, the United States was thriving, with industries forging ahead, supplying manufactures to countries throughout the world. With a generosity which is now historic, that country helped many exhausted countries to get on their feet again.

There were many writers who forecast that this state of affairs, with American industry and exports dominating the world, would continue indefinitely. I took a contrary view, and ten years ago I argued that fundamentally the industries of Europe in general, and of Britain in particular, were stronger and more flexible than the pessimists admitted.

Now in 1961, when the industries of Europe are not merely back on their feet but progressing rapidly, and now that the Soviet Union is steaming ahead technically, beating industrial targets every year, while the United States has six million unemployed and a balance of payments problem, I do not want in any carping way to say "I told you so" but to point out some of the things which are happening today and which will go on happening for years to come.

We in Britain have lessons to learn. So have our friends in the United States, and so, perhaps, have you here in Australia.

Big Changes

Let me take the non-Communist world first. Why has the United States so dramatically switched from being a country with a huge export surplus to a country which is troubled about its balance of payments? Why has West Germany risen so spectacularly from the dismembered, disorganised, defeated and bankrupt country we knew in 1945 to the country whose main problem today seems to be the enormous surplus on its balance of payments?

Why does Britain, though altogether better off than the pessimists forecast, still look anxiously at its precarious balance of payments position?

One answer is to be found in the temporary nature of the American economic domination during the first decade after the war.

The industries of Europe, including Britain, were concentrated on a desperate war: there was no room for peacetime industries, no time for research and development or replacement or expansion. Only in the United States was there the productive capacity to supply the goods the world needed, and technical progress and productivity had left European industry a long way behind.

Prosperity in the United States seemed assured for ever. Productivity was at a high level because of technical progress; but wages and standards of living continued to rise, and easy exports and the relative freedom from effective foreign competition both at home and abroad contained the seeds of future troubles.

With the war over, progress was made in many countries not only in rebuilding industries but in technical efficiency and productivity. Production of new consumer goods began to flow from the rebuilt industries of Europe. American technical superiority had hitherto outweighed the handicap of very high wage levels, but other countries were making rapid technical progress and their wage levels remained far below American.

Low Wages

In Western Germany in particular the wage level remained low; this was due to the continual flow of refugees from East Germany and beyond, and the absence of any effective trade union organisation. But, with typical determination and hard work and a tradition of high technical efficiency, the advantages in export markets of low wage costs were clear. German exports rose from £1000m. in 1950 to £3000m. in 1955 and to £5000m. in 1959.

In Britain, too, the rebuilding and reshaping of industries went on apace, but wage levels, though far below American, remained above German and rose as productivity rose.

Outside Europe and America there were other movements equally significant. In Japan, Hong Kong and India new industries were growing up and old ones expanded. Much of this industrial development was achieved with aid from the United States and Canada, and additional capital also came from Britain. Today Japan is easily the largest textile exporter in the world, India is the second

largest, and the textile industries of both countries are flourishing and growing while the corresponding industries in Europe and America struggle to maintain their present markets. In the case of Japan, a large range of high-quality goods produced by other industries is being exported at prices which make competition from Europe and America very difficult indeed.

Now what is going to happen? It would seem that, with their growing technical efficiency, countries with low wage levels will drive out of their traditional markets those countries which have high wage levels.

Merely to put up barriers against these goods is no permanent solution. Certainly for the United States, with its farsighted policy of welding together the non-Communist world into a strong, economic whole, a policy of economic isolation is impossible. So is a policy of cutting off economic aid to underdeveloped countries. For Australia also, with its high standards of living and its need to export a large proportion of its basic products, economic isolation is impracticable.

Not so Desperate

There is no single or simple solution to this problem of competition from countries with lower wage rates and high technical efficiency. But the position is not so desperate as it appears.

First, this competition is at its strongest in those industries where wages form a high proportion of total costs. In others—and I am happy to include the chemical industry in this group—very heavy capital expenditure plus highly specialised technical knowledge count for more than wage rates. In these industries the United States and, to a growing extent, Britain, Germany, and other countries in Europe still have an edge over countries with low wage rates but with lower technical standards also. For example, in the building of ships, in which wages are a dominant element, the United States cannot compete with other countries unless the Government there is prepared to pay practically half the total cost. On the other hand, in the production of certain chemicals, pharmaceuticals and plastics American technical efficiency still more than balances the higher wage rates paid in that country.

Secondly, there are some things for which a particular country has quite exceptional natural advantages or exceptional skills which enable exports to be made in competition with other countries. Britain, for example, happens to be exceptionally well placed in the raw materials needed for certain heavy inorganic chemicals.

In the third place, in so far as countries with low income standards win more trade, their standards of living tend to rise. This increase in living standards and wages, which I must emphasise is an objective in itself, leads to a reduction in the competitive power in overseas markets. This is particularly true where there is still a technical gap to be made good. As between Britain and Western Germany, I believe that the rise in German wage rates recently will have a corrective effect on the competitive strength of British exports and do much to restore the balance lost when German wage levels were so much below those in Britain.

For the United States, however, I believe that the gap in wages and the declining competitive position of much of her exports will not be cured by reliance on these

factors. Nor will the tying of American economic aid to American exports help much. Already Pakistan, which I visited recently, is complaining that to be compelled to buy in America means paying up to 30% more for the capital equipment she needs.

Any attempt, however, by the United States to bottle up the inflation which has already taken place there and to push down internal prices and wages until exports are competitive again and until some imports can be kept down by effective competition by home producers would be disastrous. The deep depression which this would cause in the United States would spread throughout the whole non-Communist world and would go still deeper if Britain, Germany and other countries were misguided enough to co-operate.

This is what happened catastrophically in 1925, when Britain with American and European co-operation returned to the pre-war rate of exchange with the dollar and with gold in spite of the inflation of the first world war. It is not too much to say that the seeds of World War II were given the soil in which to germinate by the worldwide misery caused by this quite disastrous financial policy. In a natural but false pride or false patriotism we can boast that the ultimate objective is to keep the value of the pound or the dollar intact at all costs. The costs can be world depression, and the laugh would be with the Communists. One thing worse than inflation is to act as though inflation had not already taken place.

Iron Curtain Trade

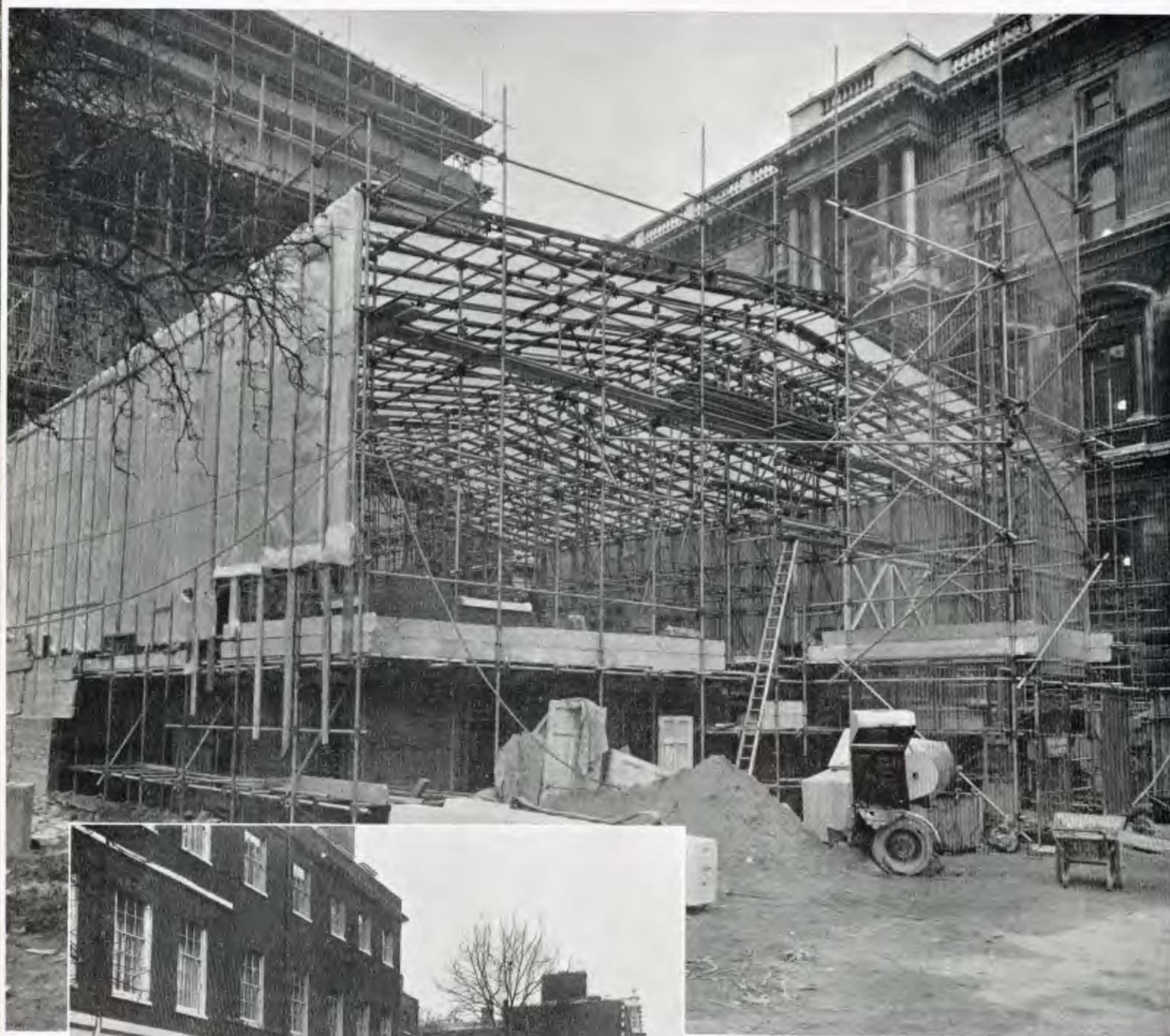
Now just a word about the problem of trading with the Communist countries. I believe that the more we trade normally with these countries, the higher their standards of living rise, the greater will be the prospects of an easing of international tensions. In spite of the spectacular achievements in nuclear physics and with rockets, the Soviet Union is still a long way behind the Western world in productive efficiency and in the quality and availability of consumer goods.

I have recently visited the Soviet Union, Rumania, Poland and Czechoslovakia, and there is a recognition there of this inferiority. Competition from these countries on the basis of economic costs is not to be feared for many years, if at all; competition of an unfair character, that is to say the export of goods much below the cost of production, is bound to take place for some goods, but with the growing internal demand for consumer goods in these countries I believe that this will not be a major factor in world trade.

This silent revolution in world trade with hitherto underdeveloped countries gradually approaching the highly developed countries in productive efficiency, increasing their standards of living, and competing effectively for large slices of trade formerly held by the latter will, I believe, not only go on but will gather momentum. This I firmly believe to be in the interests of the developed countries as a whole because the less developed countries will become better customers as their standards of living rise. If the countries of Europe and America—and, may I add, Australia—meet these revolutionary changes in the pattern of world trade with energy, ingenuity and flexibility, I am convinced that they will not suffer and will come to recognise the changes as for their own good as well as for the good of the rest of the world.

NEWS IN PICTURES

Home and Overseas



Downing Street under 'Visqueen.' A canopy of ICI 'Visqueen' polythene sheet (*seen above*) covers building work at present being carried out at No. 12 Downing Street. The project includes the renovation of Nos. 10 and 11—normally the official residences of the Prime Minister and the Chancellor of the Exchequer. The enclosure has allowed work to continue in all weather conditions and assisted in keeping the scheme on schedule. *Left:* A view of Downing Street before rebuilding started



Search for speed trial sites. During a survey of sites for an attempt on the world land speed record by Mr. Donald Campbell later this year, Mr. Warren Bonython, ICIANZ Saltfield manager, watches Mr. D. B. Taylor of BP Australia Ltd. testing the depth of salt on Lake Eyre in South Australia. They were passengers in the first plane to land on these salt flats. *Below:* The pilot is being helped down by radio because of difficulty caused by mirages. (*See page 171*)



Leipzig spring fair. At the Leipzig spring fair, Dr. H. Samuels, Dyestuffs Division Sales Director, signed a contract value £150,000 with Dia Chemie, the Government Buying Agency in the German Democratic Republic, for dyestuffs, pigments, rubber chemicals and textile chemicals. *L.-r.:* Mr. K. Stern (Anglo-Austrian Trading Co.), Dr. H. Samuels, and Mr. Wallstein and Mr. Schneider of Dia Chemie



Miss ICI (Huddersfield). A highlight of Dyestuffs Division's Huddersfield Works Ball was the election of 16-year-old Commercial Department clerk Miss Penelope Walsh as Miss ICI (Huddersfield). She is seen here with two of the judges, vocalists from Eric Winstone's band



Changing skyline. Dominating the Thames-side scene at Millbank is the 34-storey tower of the 3½-acre development by John Mowlem Ltd. —who also built Thames House and Imperial Chemical House some 30 years ago—for the Legal and General Assurance Society. The development will include an 8-storey Y block, a 12-storey flats block and a 3-tier car park. When complete the tower will be 230 ft. above Nelson's hat in Trafalgar Square, and exactly 50 ft. higher than the pinnacles of the Victoria Tower of the House of Commons (centre). Completion date is scheduled for autumn 1962

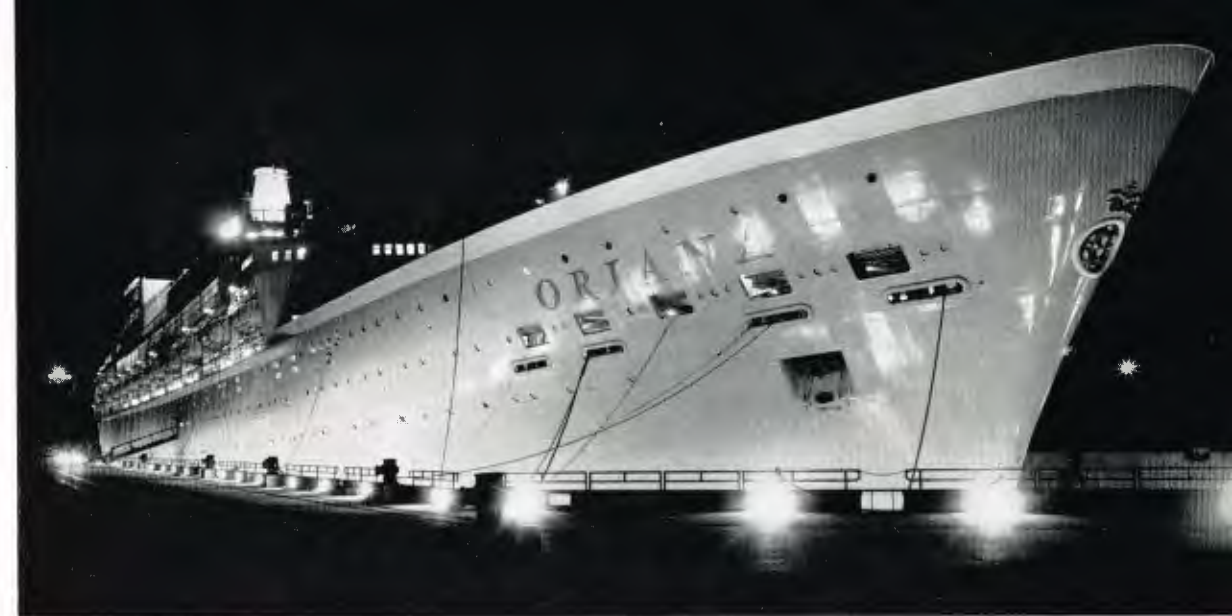
Transatlantic cable.

Half the polythene used in the construction of the new transatlantic telephone cable was made by Plastics Division and half by Canadian Industries Ltd. It measures 2100 nautical miles, and it will ultimately form part of the Commonwealth round the-world system. *Near right:* The new, less bulky cable, and the old one. *Below:* The laying gear aboard the PO cable ship *Monarch*



"Inger Andreassen" is the biggest vessel yet to navigate the River Weaver as far as Alkali Division's Wallerscote Wharf, where she loaded up with a cargo of soda ash and bicarbonate of soda for Stockholm. *Lower picture:* Captain E. O. Frohn with Mr. Laurie Mills, a retired foreman steamer captain of Alkali Division, who piloted the vessel up the river

Maiden voyage. Our striking night picture shows SS *Oriana*, which recently made her maiden voyage to Australia. Two ICI products—"Vynide" from ICI (Hyde) and Paints Division's "Dulux" paint—have been used extensively for interior decoration. In all, about 32,000 yards of mural "Vynide" pvc coated wall covering were used on walls, in cabins, alleyways and the wheelhouse, and some 300 gallons of "Dulux" gloss and flat finishes were used in painting the public accommodation



Wilton awards. Last month a Wilton Works catering team entered the Tyneside Exhibition of Modern Cookery for the first time and brought back a cup, several certificates and personal cheques. The team comprised Miss M. Stewart, Mrs. M. Benton (Challenge Cup winner), Mr. M. J. McCarthy, Mrs. J. Pearson, Miss M. Suthurst, Mr. B. Agar and Mrs. G. Russell. *Above:* An unusual view of some winning entries



ICI bellringers. Six ICI men from Billingham, Dyestuffs and HOC Divisions recently rang a peal of 5040 changes lasting 2 hours 32 minutes on the six bells at St. John the Evangelist Church at East Witton, near Leyburn. They are seen here in the church belfry. *Left to right:* Peter Wishart (HOC), Peter Scholfield (Dyestuffs), Kenneth Lawson (HOC), Rodney Padgin (Dyestuffs), Derek Ogden (Dyestuffs) and Peter Semmens (Billingham)



Piebald lamb. Not many people are lucky enough to find a lamb to cuddle near their office. But Miss Margaret Hough of Alkali Division's Operations Department was when, thanks to the Division's policy of keeping its own flock of sheep for "mowing" the banks of the lime beds, she found this one with the captivating piebald face



BOWLS— the most popular sport of all

By Denzil Batchelor

"Almost petrifying amateurism," writes Denzil Batchelor of bowls, the most popular game of all in Britain today—the game for which nobody has ever suggested a government subsidy and which remains untainted by commercial exploitation. Yet, measured by the number of clubs, it has grown by 20% in the last ten years.

No one—not even the Wolfenden Committee—has suggested a subsidy for the nation's most widely played game: a game which is (except for a tiny splinter group) as amateur a pastime as the University Boat Race. The popularity of this sport can be gauged from the fact that in the last year for which figures are available 57,266 took part in competitions run by counties affiliated to the National Association. Its almost petrifying amateurism is shown by the fact that at the time of writing a touring team is returning from New Zealand—each member of which has paid between £1200 and £1500 for the privilege of representing his country abroad at the nation's most popular sport.

I am talking, of course, of bowls, one form of which was played (as the contents of an Egyptian grave prove) seven thousand years ago; which was known to

the Saxons as Bolla and to the Polynesians as Ula; and which has been played continuously on a Southampton rink since the thirteenth century.

The game's popularity is steadily increasing, despite its lack of financial backing and the almost complete disinterest accorded it by the national press. In 1950 there were two thousand clubs affiliated to the English Bowling Association: ten years later there were 2432.

The game's widespread appeal is proved by the fact that members from some of the forty Rhodesian clubs as well as others from Hong Kong and Fiji have competed in the Empire Games, while in the past sixty years, tours of Britain have been made by Australia, Canada, South Africa and the United States among others.

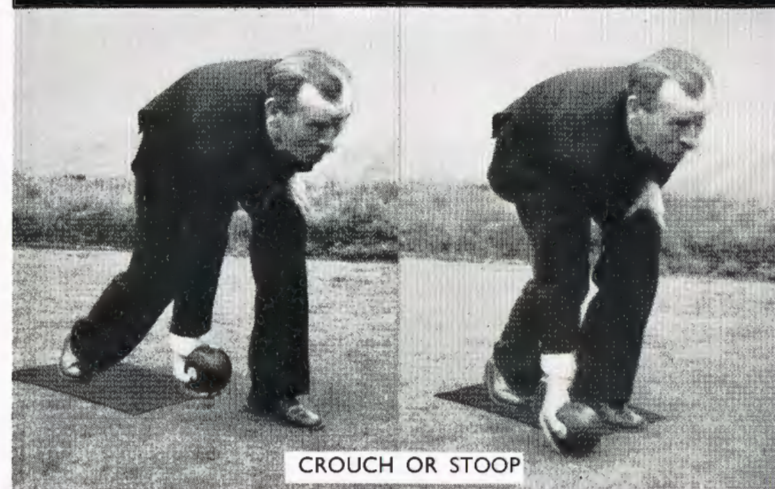
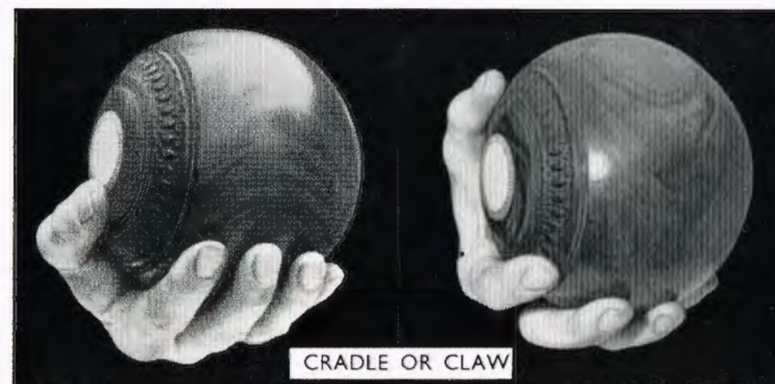
In the past few years more and more women have

taken to bowls—which reminds me that when as sports editor of *Picture Post* I was anxious to popularise their performance I was handicapped by our photographers' insistence that they offered only one possible picture: a rear view of the most Junoesque competitors in play, taken from below, to give (as is the case with Becher's Brook) the maximum impression of the heroic proportions of the subject.

More men players, more women players, and—most



The 1956 Amateur National Championship in play at Paddington Club



Controversy over style and grip is perhaps as old as the game. Cradle or claw, crouch or stoop—each method has its advocates

encouraging trend of all—more youngsters taking to the game! There are, of course, still more veterans than juveniles in bowls: but today there is a tendency to pick younger men as well as old masters for representative matches. Not, you will understand, kids in their twenties. “They’re too callow,” said a household name in bowls who desired to remain anonymous. “But there’s no reason why you shouldn’t be playing in the very top company before you’re 40.”

Too callow? Well, you need ball sense, an unfaltering hand and an unfailing eye. I remember an ancient enthusiast telling me in my youth how the man who in A. A. Thomson’s words can be called “the father of international bowls” abounded in just these qualities. When this past master took up the game in 1901, Scotland had nearly 400 affiliated clubs—no other home country had an association at all. The father of the game saw to it that England, Ireland and

Wales formed associations, and national sides: he himself captained England, and saw his team win the international trophy. “His name,” threw out my ancient friend, “was W. G. Grace.” He added, as if it were the most unimportant of footnotes: “I believe he played a little cricket in his time.”

Well, since W.G.’s day there have been many immortal characters to add lustre to the history of the level-green game played on smooth turf not more than 44 yards square, on rinks from 19 to 21 ft. wide; in singles matches (21 points up), in pairs, triples (18 ends), or in “rinks”—the classical game (21 ends) of four a side, in which each man plays two bowls in turn, under the authority of a “skip.”

Among the great players have been David Bryant, the Somerset schoolmaster and 1960 singles champion; Ken Coulson, England captain and 1959 champion; engineer Jim Brayley (a mere youngster in his forties), and qualified chemist Fred Harris, who together won the National Paris title in 1959 and then went on to triumph in the first British Isles championship.

But two outstanding names echo down the years. Perhaps the greatest individual player of all is Percy Baker, a photographer from Poole Park, Dorset, who won the first of his four individual championships in 1932—and the last in 1955. But even he has not made a more imposing niche for himself in the game’s history than the late Bert Keech, a Yorkshire publican, the only man to captain his country at any sport while weighing 22 stone. (His nearest rival, Warwick Armstrong, the Australian cricketer, was a mere strippling of 18 stone when captain: precisely double what he had weighed when he first played for the side.)

As lawn tennis has its Wimbledon, so has bowls its championship fortnight. This takes place in August, when the national titles and the semi-finals and final of the Middleton Cup, the inter-county competition are fought out at Mortlake. (It used to be at the historic Paddington Club, but today the amenities of

Mortlake are unchallengeably plushy, and the fortnight has changed its address officially because the green at Paddington was held to have deteriorated.)

During this Championship Fortnight you will see in action the exponents of the *cradle* grip (the bowl palmed with fingers close together, thumb just below the disc), and of the *claw* (the bowl held in the palm, with three fingers on the playing surface, thumb and little finger on either side). You will watch the *upright* player—the best stylist of all; the *stooper*, with knees bent and bowl held near the turf; and the *croucher*, who takes a preliminary step forward and delivers his bowl close to the turf. You will hear such jargon as “back bowl” (a bowl lying between the jack and the rear ditch); “cartwheel” (a bowl delivered with a lot of bias, the curving course taken by a bowl to make its way closest to the jack, on which victory depends); and even “showing eyes” (a bowl which wobbles so that the side disc continually shows).

If you are a northerner, it is possible that your allegiance is to the crown green game, where the green has a hump from 8 to 18 in. in the centre; where the woods are smaller and lighter; and where the jack is a small replica of the wood and similarly biased. Games are usually 21 points up: and there are in Lancashire and Yorkshire some fifty professionals under the control of a separate association. It is said that there are at least a million bowlers playing on crown greens—in the south there are two such greens, in Slough and Dagenham.

Well, such is bowls—a great game: by popular acclaim, the greatest. What was good enough for Sir Francis Drake should be good enough for any of us. It is, after all, the only game in the world you can take up when moving in top gear has become a burden to you, and yet hope to reach representative rank—providing, of course, that you are prepared to spring £1000 or so on an overseas tour!



The Women’s Amateur National Bowls Championships, 1954

People and events . . .

Further Developments on Tees-side

FOLLOWING closely on the announcement of a £6 million "face-lift" to some of Billingham Division's processes comes news that Heavy Organic Chemicals Division is to build a crude oil distillation plant on the north bank of the Tees near Billingham. Costing several million pounds, it is due for completion before the end of 1962, and will be capable of distilling one million tons of crude oil a year. It will produce some of the naphtha used as the raw material for the three olefine plants at Wilton. The site for the new plant—on land reclaimed from the sea—adjoins the pipeline system linking Wilton and Billingham, so that products can be transferred easily to either factory.

Meanwhile, inside the Billingham factory a site has now been prepared for the new plants which, using a highly efficient process developed at Billingham, will produce at a lower cost the hydrogen which is the first stage in the manufacture of ammonia, fertilizers, and many of the other products of Billingham Division. The new plant will use oil as a raw material, and associated with the change is the decision to shut down Billingham's coke ovens at the end of this year. These ovens have been in continuous operation since mid-1929, and during that time have consumed over 14 million tons of coal.

Top Appointments

MORE promotions were announced last month, following the appointment of **Mr. Michael Clapham** and **Mr. Harold Smith** to the Main Board. **Mr. Derrick Carter** takes over as chairman of General Chemicals Division and is in turn succeeded as a joint managing director by **Mr. John Tedbury**, who also becomes

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chairman of Plant Protection Ltd. **Mr. St. John Elstub** succeeds **Mr. Clapham** at Metals Division and **Dr. William Lake** takes over **Mr. Elstub's** old job as joint managing director.

Mr. Clapham, who has taken over as an overseas director, is 49. A printer by trade, he joined The Kynoch Press at Witton in 1938, becoming manager there in 1940. During the war he was seconded to the Tube Alloys Project (cover name for war-time atomic energy activities) to develop work started at The Kynoch Press on a process for separating uranium isotopes.

In 1945, back at Metals Division, he became personnel director at the very early age of 33. (The record is held by **Mr. Lincoln Steel**, who was appointed to the Alkali Board at 32.) He succeeded **Dr. Maurice Cook** as chairman in January last year.

Outside ICI **Mr. Clapham** has been a member of the Council of Birmingham University and of the Albermarle Committee on youth services set up by the Ministry of Education. Printing is still, he says, one of his interests, though building and cooking are more frequently practised hobbies. He is married, with three sons and a daughter.

Mr. Smith, who is 54, steps into **Dr. Beeching's** shoes as technical director next month. He is both a chemist and

a chemical engineer and has spent all his working life with ICI, most of it with Dyestuffs Division. His early years with that Division were spent on the research side, and in 1939 he took part in a technical mission to the USA that was a prelude to Dyestuffs Division embarking on nylon manufacture.

He moved over to the production side in 1943, becoming assistant works manager at Huddersfield. He became production director in 1952, joint managing director in 1955, joint managing director of General Chemicals Division in 1957, and chairman of that Division in 1959.

He is married and lives at present at Caldby in Cheshire. His main relaxation is gardening, and he is a member of the Royal Horticultural Society.

* * *

Mr. Carter, also 54, joined ICI in 1928 after a period building bridges and skyscrapers in Canada. He actually started at Billingham as an engineer but soon switched to the sales side, first at Billingham, then with the South Eastern Sales Division, and after Army service during the war, with Southern Region Plastics Sales Department and General Chemicals Division Sales Control. He became commercial director of this Division in 1951 and joint managing director two years later.

Mr. Carter is married and has two daughters and a son. His hobbies are yachting, tennis, model engineering and gardening.

Mr. Elstub, who is 45, is a rocket expert. After three years as an engineer with Billingham Division, he joined the RAF in 1939 and served first as an operational bomber pilot, later as a flying instructor and, for the



Mr. Clapham



Mr. Smith



Mr. Carter



Mr. Elstub

last year, as an armament officer on technical intelligence and rocket design. After demobilisation he spent two years with the Ministry of Supply as chief engineer of the Rocket Propulsion Department at Westcott and was responsible for the design of the first British liquid fuel rocket motor.

He rejoined ICI in 1947 as a deputy chief engineer of Metals Division. He was appointed to the Division Board in 1951 but later in the same year was seconded as director in charge of Summerfield Research Station, the rocket research establishment managed by the Division for the Ministry of Aviation. He resumed full-time duties as metal production director in 1952, and was appointed joint managing director in 1957.

Mr. Elstub was awarded the CBE in the 1954 New Year's Honours for his contributions to rocket technology. He lives at Hartlebury, Worcestershire, and is married with two children.

Record Sales

THE forecast at the time of the announcement of the one-for-twenty rights issue in January that the Group's profits before taxation in 1960 would be about £88 million has now been confirmed. The actual figure is £88,044,000, and this compares with £73,116,000 for 1959.

Group sales to external customers which in 1959 topped the £500 million mark for the first time are up again—£558 million as against £509 million. Exports at f.o.b. value have risen from £88 million to £97 million.

The provision for the Profit Sharing Scheme is £8½ million. Group income after taxation is £48 million, which is £6 million more than last year.

A final dividend of 1s. 6d. on each £1 unit of ordinary stock is recommended, making a total ordinary dividend of 2s. 9d. for the year (2s. 3d. in 1959). This is as forecast in January.

Trouble with Thatch

IN June 1959 the Guardians and Trustees of Shakespeare's birthplace approached ICI for advice on protecting the thatched roof of Anne Hathaway's cottage at Stratford-upon-Avon from attack by birds. The birds—sparrows were the chief offenders—had been systematically removing



straws from the thatch. Within a short space of time holes formed, which not only spoiled the appearance of the thatch but also considerably reduced its efficiency in keeping out the rain.

While a chemical repellent might have provided a temporary answer to the problem, no treatment could be suggested which would give a lasting

result. It was at this stage that Fibres Division came into the picture with the recommendation that a fine 'Terylene' netting might well provide the answer. A trial quantity of fine diamond mesh netting was supplied and fixed to the gable end of the roof in November 1959.

At the end of last year the 'Terylene' netting was examined and found to be in excellent condition. Not only had it done its job well in keeping the birds away from the thatch, but it had toned in well with it too.

FRS for Dr. Chatt

FOR the second year running the name of an ICI man appears in the Royal Society's list of new fellows. Last year **Dr. Ronald Holroyd**, one of ICI's deputy chairmen, was elected; this year 46-year-old **Dr. Joseph Chatt**, Akers Group manager of the Research Department of Heavy Organic Chemicals Division. He shares with **Mr. C. F. Kearton**, managing director of Courtaulds, the distinction of being the only industrial scientists among 25 new fellows.

Dr. Chatt joined the Butterwick (now Akers) Research Laboratories at Welwyn in 1946 after a year at the Imperial College of Science and Technology as an ICI research fellow. Before that he was chief chemist of Peter Spence & Sons. He holds four Cambridge degrees—B.A. (1937), Ph.D. (1940), M.A. (1941) and Sc.D. (1956).

He is a member of several committees of national and international chemical societies and is an honorary secretary of the Chemical Society and



Dr. Chatt

of the IUPAC commission on the nomenclature of inorganic chemistry. Dr. Chatt's recent work has been the study of co-ordination compounds of metals in unusually low valent states, and of similar compounds containing hydrocarbons and hydrocarbon residues.

He is married, with a son and a daughter, and his hobbies include collecting coins and medals (he has been chairman of the St. Albans and Hertfordshire Numismatic Society), motoring and (somewhat reluctantly) gardening.

Zoological Find

THE airman son of an Ardeer man has emerged as a key figure in what has been described as a major zoological discovery.

For Senior Aircraftman Dick King, whose father, **Mr. George King**, works in Blasting Department, is one of a handful of RAF men serving in Malaya who have stumbled on the existence of a hitherto unknown species of giant lizard.

The discovery was made in Song Song and Telor, two small islands off the Kedah coast used by the RAF for large-scale bombing and rocket-firing practice. SAC King was in a party of

about a dozen airmen who worked on the islands as spotters.

Officials of the Federation Game Department in Kuala Lumpur were sceptical when the airmen reported seeing "dragon-like creatures" 12-14 ft. long on Song Song and Telor. But when one of the lizards attacked an Alsatian dog, SAC King made an official report of the incident, and the Department decided to find out more about them.

Now a full-scale expedition is being planned. Uppermost in the minds of the investigators is the question: Are



the Kedah lizards as big as or bigger than the celebrated Komodo "dragons"? This is an Indonesian species that has been the subject of a David Attenborough television broadcast.

The existence of the giant lizards has been officially acknowledged by the RAF. An Air Ministry newsletter

issued in London records how the lizards are sighted regularly at dawn and dusk, hunting in small pools for crabs and small fish thrown up by the tide.

But SAC King is no longer involved in the investigations. He has been drafted to Singapore.

He still writes about the "dragons" in his letters home, but for a first-hand account his family will have to wait until his 2½ year overseas posting ends in October.

Discoverer Scheme

HILLHOUSE Factory's youth training scheme, the subject of our leading article this month, is not the only such scheme operating in the Company. Another type of training known as the Discoverer Scheme, is being run very successfully at Billingham.

It started in 1959, when the Division ran a 10-day course on Outward Bound lines at Stubb House, near Barnard Castle, a youth training centre of the Durham Education Authority, for 30 apprentices, factory youths and laboratory assistants. It was a great success, and the experiment was repeated last year.

The aim now is that all boys in Billingham Division or in other Divisions on the Billingham Site shall have the chance to go on the course if they want to and if their work is satisfactory. To this end, sixty boys instead of thirty will be taken on the course this summer.

IN BRIEF

New Issue. Out of a total of 12,693,833 ordinary £1 shares of ICI offered to stockholders in February, over 97% of the issue has been taken up by the stockholders.

Gardeners' Sunday. On Sunday, 7th May, the grounds of Warren House, the Company's Staff Training Centre at Kingston-on-Thames, will be open to the public from 2 to 6 p.m. under the Gardeners' Sunday Scheme. The admission fee of 1s. goes to gardening charities.

Magadi hits a Million. Magadi Soda Co., Kenya, recently completed a million hours without a lost time accident, for the first time in the company's history.

Athletics Honour. At the recent annual dinner of the Welsh Amateur Athletics Association held in Cardiff, the deputy Lord Mayor presented **Mr. Dick James** of Impalco's Waunarlwydd Works with a meritorious plaque of honour for over 30 years' service to the Association.

Deaths. We announce with great regret the deaths of **Dr. W. C. Cresdee**, Nobel Division medical officer, on 16th March and of **Mr. J. Trelfa**, Severnside Works secretary/accountant, on 22nd March.

Notable Coincidence. Two employees on Polythene Works, Wilton, who were both married on the same day—one at Marske and the other at Middlesbrough—found themselves staying at the same honeymoon hotel in London with their respective partners. They were **Mrs. Janet Quayle** (née Allenby), a typist, and **Mr. Peter McParland**, an electrician.

Fourth Million. 'Terylene' Works at Wilton recorded its fourth run of one million hours without a lost time accident on 28th March. They are the first works at Wilton to achieve a million hours for the fourth time.

Gardener honoured. **Mr. W. Dale**, foreman gardener at Winnington Works

(Alkali Division), has been made a vice-president of the National Dahlia Society. Mr. Dale has been a member of the society for 17 years and has been vice-chairman of the northern section (of which he was a founder member) for the past 3 years.

Rome Trip. 29-year-old Billingham architectural assistant **Mr. James Haggas** was one of a party of 14 students who spent two weeks in Rome last month under a study scheme sponsored by the Architectural Association and the Royal Institute of British Architects. He is an evening student at Middlesbrough College of Art.

Pigeon Conference. A Billingham foreman, **Mr. Bill Towers**, who as secretary of the "Up North" combine is one of the country's senior pigeon officials, was a delegate at a four-day international conference last month at Essen in Germany attended by members of 31 countries.

During the past winter the first Senior Discoverer course was held for twelve picked boys. Four weekend camps were held in the Lake District. Each lasted from Friday morning to Monday evening, so the boys themselves contributed two days and the Company allowed them the other two.

One weekend was aptly dubbed Operation Kontiki. For this the boys—split into three teams—had to fell timber, transport it down a mountain-side, build a raft, and negotiate it across to an offshore island on the other side of Lake Windermere. A full-scale night mountain rescue exercise, carried out under professional supervision, was part of a service weekend. Other activities included research into the effects of fatigue and the problems of mountain expedition work in the winter.

£145 Suggestion Award

A 'TERYLENE' Works electrician, **Mr. George Taylor**, last month received a £135 cheque for taking a critical look at an electrical warning device used at Wilton.

As a result of his scrutiny of the device—a battery-operated red road barrier light used to warn pedestrians and motorists of obstructions, stationary objects and holes in the road during the hours of darkness—Mr. Taylor submitted an idea under the ICI Suggestion Scheme, which, he claimed, would cut running costs without reducing efficiency. The suggestion brought an interim award of £10 shortly after its submission.



Mr. Taylor

Presenting a cheque for a further £135 at the March meeting of Wilton Engineering Works Council, **Mr. C. Archer**, the works manager, said that, during the past year, the usefulness and saving which resulted from the adoption of Mr. Taylor's idea had been assessed, and his total award represented 50% of this realised saving after deducting the cost of implementation.



The Chairman at Khewra. Mr. S. P. Chambers with the employees of the Khewra Soda Co. to whom he presented long service awards. Mr. Chambers visited Khewra Soda Works, which are in the north of West Pakistan, during his visit to India and Pakistan. Khewra Soda Co., a subsidiary of ICI, started up towards the end of the last war. About 600 people are employed

He explained that Mr. Taylor is now working on 'Terylene' Works but for a long time was employed in the Electrical Workshops, where for a while it was his job to service and charge 120 of these lights—modern counterparts of the paraffin-burning lamps still widely used in construction work.

Mr. Taylor realised that the drain on the battery in the lamps, which were kept fully charged and available every night of the year for Site Maintenance Section, was heavy, requiring the recharging of 60 batteries every other day.

Since the lights were required to give merely red and not white light, he reasoned that a lower wattage bulb would still give adequate light. He therefore designed and fitted a modified bulb holder and used a 0.5 watt instead of a 2 watt bulb. The batteries need now be recharged only once a week.

Site for Speed Trials?

ICI's saltfield manager **Mr. Warren Bonython** was recently a passenger in the first aircraft to land on the salt flats of Lake Eyre in South Australia. He went there to survey possible sites for an attempt on the world land speed

record by Mr. Donald Campbell in Bluebird II later this year.

On Mr. Bonython's return a cable was sent to Mr. Campbell urging him to send a representative as soon as possible to inspect the "lake"—more than 3000 square miles of salt pan and salt marsh which has the lowest recorded rainfall of any place in Australia (about 4 in. a year).

★ ★ ★

The survey party, flying in a Piper Apache, found a 19-mile stretch of salt crust which was dry, firm and smooth. Mr. Bonython said they had suggested that an attempt should be made between June and October. Then it should be possible to avoid excessive heat, sun glare, mirages, and possible atmospheric turbulence. In the hotter months the mechanics would find their equipment too hot to handle.

Mr. Bonython went to Lake Eyre at the invitation of BP Australia Ltd. because he is a leading authority on the lake. He first saw it from the air in 1950, when it was full. Later that year the Royal Geographical Society of Australia (South Australia branch), of which he is now president, asked him to join a committee to report on the

flooding and investigate the evaporation rate. Since then he has made more than a dozen visits. He has driven across the "lake" by car, but this time he travelled 100 miles across it on the pillion seat of a motor bike, inspecting possible tracks. (See pictures on page 167.)

Mr. Jaggi Lall

Jag Mohan Lall, chairman of ICI (India), died suddenly in Calcutta on 15th April. After qualifying as a chartered accountant in London—he passed first in his Final examination and was awarded the Frederick Whinney Prize—Jaggi Lall joined ICI (India) in 1939 in Calcutta. On 1st April 1951 he joined the Board, and on 1st April 1958 he became chairman of ICI (India).

Mr. G. Wilkinson (India Dept.), a former personnel director of ICI (India), writes:

The sudden death of Jaggi Lall is an irreparable loss to ICI and to a host of friends both inside the organisation and elsewhere. He had all the qualities which go to make an outstanding leader of industry. A very able accountant and administrator, he had a keen sense of humour coupled with an analytical brain, and an unusual gift of getting along with people in all walks of life. When I first knew him before the war he was the only Indian member of the management staff of ICI (India), but he quickly gained the respect and friendship of his British colleagues, a fact which was in itself instrumental in opening the way to promotion to management for an increasing number of young Indians. As he progressed to the higher ranks in the company he became to an increasing extent the spokesman and representative of the Indian employees of ICI (India), and the happy situation today in which Indians and British work together on terms of equality and friendship is largely due to Jaggi Lall's efforts. He was the first Indian to become a director of ICI (India).

A strong but extremely likeable personality, Jaggi Lall was a very able negotiator. He was at his best when putting forward a case, to which one could always be certain that he had

given the most thorough preparation. When he backed a cause, his logic and powers of persuasion were such that very few could stand against him.

Out of working hours Jaggi Lall was a most entertaining person. He was a very generous host, and I can remember him on scores of occasions, particularly in his younger days, making it very difficult for his guests to leave a party at a seemly hour and with reasonable decorum. His two main forms of relaxation were bridge and golf. He was a very skilled bridge player, and woe betide any opponent who overcalled his hand. His golf was rather patchy, and his swing had a rugged individuality of its own!

The Chairman writes:

Jaggi Lall was a man of outstanding ability and character. He was full of energy and enthusiasm when I visited and stayed with him in February. As chairman of ICI (India) his success meant a lot to people outside ICI, and particularly to the Government of India and to everybody concerned with the good relations between Britain and India.

Although he spoke for only a few minutes after a Central Council meeting about two years ago, he impressed everybody with his appreciation of the importance of internal and external relations. Over the last few years, I and my wife, and many of my colleagues on the Board, have had the privilege of a close personal friendship with Jaggi and his charming wife. Our deepest sympathy goes out to Mrs. Lall and her two children.

Nuclear Developments Ltd.

METALS Division has joined forces with Rolls-Royce Ltd. and the Rio Tinto Co. Ltd. to form a new company to operate in the field of civil nuclear engineering in collaboration with the atomic power consortia. The new company is to be called Nuclear Developments Ltd., and the UKAEA has been kept fully informed of its formation. It is the first private enterprise in Britain to go in for the manufacture of fuel elements and the preparation of fuel for civil purposes.

Each of the participants has, in

addition to wide technical resources, special know-how which will be appropriate to the future role of the new company in nuclear engineering. Rio Tinto mines, extracts and processes uranium on a large scale. Rolls-Royce has been engaged in the nuclear field for the past eight years and has a specific interest in marine nuclear propulsion. Metals Division has made several notable contributions to technological progress in nuclear engineering over the last twenty years and has exceptional facilities for the manufacture of nuclear metals and reactor components.

APPOINTMENTS

Some recent appointments in ICI are: **Billingham Division:** Mr. G. T. Britton, Casebourne Works Manager; Mr. C. V. W. Brook, Deputy Commercial Works Manager; Mr. K. H. L. Cooper, Commercial Managing Director; Mr. C. T. Y. Cowie, Clitheroe Works Manager; Mr. D. M. Grudgings, Gas Section Manager at Heysham; Mr. H. R. Hunter, Deputy Division Distribution Manager; Mr. J. N. Patterson, Education Officer; Mr. R. W. Pennock, Commercial Director. **Dyestuffs Division:** Mr. J. D. Rigg, Director (in charge of sales jointly with Dr. H. Samuels). **European Council:** Mr. J. E. Body, Staff Manager. **General Chemicals Division:** Mr. D. H. Carter, Chairman; Mr. J. L. Tedbury, Joint Managing Director (Commercial) and Chairman of Plant Protection Ltd. **Head Office:** Mr. G. D. Choat, Acting Staff Manager; Mr. G. J. F. Mackay, Head of India Department. **Metals Division:** Mr. St. J. de H. Elstrib, Chairman; Dr. W. H. G. Lake, Managing Director (Technical). **Nobel Division:** Dr. J. Bell, Production Director; Dr. J. S. Flanders, Commercial Director; Mr. J. A. Lofthouse, Engineering and Technical Director; Dr. J. D. Paterson, Division Medical Officer. **Pharmaceuticals Division:** Dr. W. G. Reid, Personnel Director; Dr. H. W. Thompson, Production Director. **The Regions:** Mr. C. P. Astle, Sales Manager of the Pharmaceuticals Department of Scotland and Northern Ireland Region. **Duperial Argentina:** Ing. R. Ferrer, Production Director. **ICI (Japan):** Mr. T. Kaneda, Director.

RETIREMENTS

Some recent senior staff retirements announced are: **Billingham Division:** Mr. J. W. Kerr, Commercial Managing Director. **The Regions:** Mr. J. Beale, Sales Manager of the Pharmaceuticals Department of Scotland and Northern Ireland Region (retiring 31st October).

50 YEARS' SERVICE

The following employees have completed 50 years with the Company: **Alkali Division:** Mr. A. J. Poultny, Stoke Salt Works (31st March); Mr. J. Phillips, Winsford Salt Works (16th April).

May IN THE GARDEN

FEEDING PLANTS

By PERCY THROWER

I WOULD go so far as to say that more money is wasted by gardeners generally through the careless use of fertilizers than by any other means, but it is possible that more plants are killed by using too much fertilizer than by not using enough. When we use a fertilizer from a bag, tin or bottle, we must bear in mind that it is a highly concentrated plant food which if not used with care will scorch the roots of the plants, and instead of growing into strong healthy plants they will be sickly and weak.

There are a few general principles to be taken into account when using fertilizer of any kind. Little and often is the golden rule. Never apply fertilizer when the soil and roots are dry, and never allow powdered or granulated fertilizers to come into contact with stems or leaves.

WHEN buying a fertilizer for general use in the garden buy a complete manure, preferably one with an organic base and one which contains the three essential plant foods, namely nitrogen, potash and phosphate. An analysis should be given with the fertilizer; if not, ask for one, and a good one will contain 5% or more of each of those three plant foods.

For plants in pots a soluble fertilizer is, I think, more convenient to use. Instructions on how it should be diluted will be on the tin or bottle, and no more than is recommended should be used. A plant in a pot should never be given ferti-

lizer until it has filled the soil in the pot with roots. If it is, the soil will quickly go sour and the plant will become sickly. Never give the fertilizer to the plant, even though it is diluted in water, if the soil in the pot is dry. Water it thoroughly first an hour or so before giving it the fertilizer. Give the plant enough of the diluted fertilizer to soak the soil in the pot right through to the bottom.

The space between the soil and the top of the pot rim, $\frac{1}{2}$ – $1\frac{1}{2}$ in. according to the size of the pot, should hold enough water to soak the ball of soil right through. As a general rule, once a week or even once a fortnight should be enough for the average plants grown in pots. Once a week is enough for tomatoes which may be carrying quite a heavy crop of fruit.

It is when the weather is warm and the plants are growing that they will reap the most benefit from fertilizers. Plants in the garden are beginning to grow quite fast now, and many of these will benefit from feeding. If fertilizers are applied in showery weather, so much the better. If not, they will begin their good work faster if they are either watered into the soil or lightly stirred into the surface.

A LITTLE fertilizer on the lawn now will give it a lush green colour. It must be spread evenly over the surface, not more than a handful for approximately each square yard. If this is not put on evenly and carefully it may result in patches of the lawn being burnt, the grass

turning brown and the appearance of the lawn ruined for several weeks. It will make distribution easier if the fertilizer is mixed with equal parts of fine sand.

A little fertilizer round each strawberry plant now will help to swell up the fruits, and along each side of the raspberry rows will help to ensure a good crop of fine fruit and will help the plants to grow strong canes for next year's fruiting.

A HANDFUL round each black-currant bush will have the same value. A little can be given to peach, nectarine and apricot trees trained on walls, and this should be well watered in because the soil near a wall is usually dry. A very light sprinkling can be put along each side of the lettuce rows, round the spring cabbage plants and between the rows of onions. It should be lightly stirred into the surface soil with the hoe. I must repeat again, keep it off the leaves and away from the stems of all plants or it will do more harm than good.

Remember also that insect pests such as greenfly and other aphids are now increasing rapidly. Do not wait until your plants are crippled with greenfly and other insect pests before spraying. Every good gardener will have in the garden shed a good insecticide and a fungicide ready to nip in the bud the beginning of insect pests and diseases. Feed your plants, keep them free from insect pests and diseases, and your garden will be the envy of the neighbours.

ON THE RUN

By Graham Strickland

Last November Graham Strickland photographed the London to Brighton Veteran Car Rally. Out of 250 starters, all made before 1905, only about 20 failed to finish. The field was an international one. American cars were taking part in 1960, as they did in the first rally held in 1896. Many cars came over from Germany and France, and cars were entered by British owners. There was only one Rolls-Royce.

Here are some details of the cars.

The French 10 h.p. Georges Richard, made in 1903, is a two-cylinder 10 h.p. car. Monsieur Georges Richard first went into business in 1897, but by 1906 he was concentrating all his energy on the production of one model, named Unic. This name later covered all vehicles produced by his company. The two French model Q De Dion Boutons were made for one year only (1903-4)—a single-cylinder 6 h.p. vehicle with a two-seater body (the first single-cylinder De Bouton was a tricycle). The company was founded in 1883 by Count Albert de Dion and Georges Bouton. As many as 41 cars from this firm were entered this year. Lord Montagu has one that he turns out every year. The Renault was built in 1901 by the well-known French firm founded as a family partnership in 1898. The two-cylinder 4 h.p. Daimler was built in 1897 by the English Daimler Company, which started life early in 1896 as a company entirely independent of the German Daimler firm. Seven Daimlers took part last year.



FAR LEFT: 1903 2-cylinder 10 h.p. Georges Richard landaulette (*G. M. Jeffreys*)

LEFT: 1903 2-cylinder 12 h.p. Darracq tonneau (*B. Thorpe*)

ABOVE: 1904 6 h.p. 1-cylinder De Dion Bouton 2-seater (*F. L. Knight*)

ABOVE RIGHT: 1904 6 h.p. 1-cylinder De Dion Bouton 2-seater (*H. T. Clarke*)

MIDDLE RIGHT: 1897 4 h.p. 2-cylinder Daimler (*E. D. Woolley*)

RIGHT: 1901 4½ h.p. 1-cylinder Renault tonneau (*E. W. Littler*)





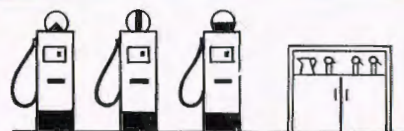
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BUDGET for ABROAD

By Geoffrey Buck

Three people touring abroad for 11 days for under £2 10s. a day each, all in—this brings Continental motoring within the reach of many people. And the secret of keeping expenses down? Planning ahead.



FOR most people the frightening thing about "abroad" is not the language difficulty, the strange food, the customs or the climate. It's simply the expense.

On the face of it, a fortnight on the Continent—what with fares, food and accommodation—is prohibitively expensive. For some people the solution is to take one of the packaged tours offered by travel agencies. This is certainly cheaper, but it ties you down.

Our solution was cheaper still, and it left us the freedom to do exactly as we pleased. We decided to load up our Ford Popular with camping equipment, take the air ferry to Calais, and tour through France, Belgium, Holland and Germany.

Here is a broad breakdown of our expenses:

	£	s.
AA foreign touring service charge ..	3	0
International camping carnet ..	1	1
Depreciation on camp equipment ..	10	0
Air ferry fare, car and passengers ..	27	0
Living expenses on Continent ..	21	12
Oil and petrol	12	18
	£75	11

For myself, my wife and our 10-year-old daughter the cost of the 11-day tour abroad, a fortnight's holiday in all, covering 1280 miles, was just over £75!

The AA service was well worth the £3. It covered not only the booking of the air trip, but reciprocal membership of equivalent organisations in each country to be visited, emergency aid arrangements in case of accident or breakdown, an invaluable handbook with maps covering the whole of Western Europe, and a semi-technical phrase-book in eight languages. The only thing we had to apply for personally was the international insurance certificate for the car.

The international camping carnet gave us priority at certain popular places, 20% discount at many camps, and third party insurance cover, together with booklets giving the location, classification and price of every authorised camping site in the countries we wanted to visit. These booklets include detailed and general maps, and we found them our most useful navigational aid.

Perhaps I had better say a word here about camping equipment. What you take, of course, is very much a matter of personal choice—and a matter of how much your car will hold. If you go for the latest gimmicks you can easily spend a fortune; but we kept our

expenditure down to £60, taking advantage of the summer sales for many items. After a great deal of catalogue-reading and window-shopping, we settled for the following:

1 quickly erected frame tent with fitted p.v.c. ground-sheet and large canopy; 3 'Safari' camp beds and three quilted sleeping bags with fitted rubber underlays; 1 10 lb. butane pressure cylinder with gas-ring attachment; 2 'Alkathene' 1 gallon water bottles; 1 soft 'Alkathene' washing bowl; 1 3 ft. square car roof rack and a six armed rubber loading harness.

The rest of the necessary equipment we had already: three small folding chairs and a folding table; a kettle, a frying pan and a saucepan; three pillows and four blankets; a picnic set, plus three soup bowls and some sharp kitchen knives. We also took a small reserve of food, in case this proved an expensive item abroad. The most useful things, we found by experience, were instant coffee, because it was cheaper than the equivalent product in the countries we visited, and a store of biscuits and home-made buns—cheaper than those we could have bought abroad and most useful for roadside snacks.

A first aid kit, a tube of 'Flypel,' an aerosol insect spray, toilet things, changes of clothes, raincoats, a portable radio, photographic equipment, car spares,



Family of three, tent, clothes, camera and camping equipment—all fit neatly into the Ford Popular. But you must practise your packing before you start

maps and documents completed our equipment. It sounds an impossible load for a small car, but somehow it all packed in—but not before we had learned that a good long trial run, with all the luggage on board, can teach you a great deal about what moves, what is needed en route, what can't be got at, and what causes rattles.

We planned our route carefully to give us an overall average of about 100 miles driving a day, excluding local running; this meant that we had leisure in the places we wanted to visit and avoided being constantly on the move. We allowed ourselves 10% time in hand, in the form of half a day spare on the fifth and ninth days, to allow for unforeseen snags. Our planned mileage was 1218 and our actual mileage 1283, so our local running was not great.

A summary of our route is:

- Day 1. Calais—Dunkirk—Ostend—Bruges.
- Day 2. Bruges—Ghent—Brussels—Louvain—Eindhoven—Veghael.
- Day 3. Local running, Eindhoven—Nijmegen area.

- Day 4. Veghel—Nijmegen—Arnhem—Zutphen—Osnabrück—Minden—Bückeburg—Hameln.
- Day 5. Hameln—Bückeburg—Unna—Hagen—Wuppertal—Cologne.
- Day 6. Cologne—Koblenz—Winningen—Trier.
- Day 7. Trier—Luxembourg—Verdun—Châlons—Meaux.
- Day 8. Meaux—Paris (local running in Paris).
- Day 9. Paris.
- Day 10. Paris—Abbeville—le Touquet.
- Day 11. Local running, le Touquet.

Here are some of the things we learned en route.

Camps. In the course of the tour we stayed in camps of all categories, from top grade to unclassified. In top-grade camps, as at the Bois de Boulogne in Paris or the Poller Fischerhaus in Cologne, we were able to pitch tent within five yards of the river bank, and there were permanent facilities for hot and cold showers, eating and drinking, laundry, washing up and shopping. Both camps were enclosed, guarded day and night, and operated a limit on numbers that left ample room between tents and caravans. Two nights in the Paris camp for the three of us, exclusive of

food, cost the equivalent of 10s. 9d., one night in the Cologne camp 4s.

Second-grade camps, as at Bruges and Trier, varied a lot in size and nature, but all had adequate facilities and piped drinking water, and were scrupulously clean.

Organised Camping

Although we only stayed at one unclassified camp, we saw a great number. They were generally quite reasonable, provided one carried an ample supply of drinking water and did not mind primitive or non-existent sanitary facilities. The one we stopped at was on the bank of a salmon-fishing reach of the River Marne, about 25 miles east of Paris. It was unguarded, yet some 20 tents and caravans were left there for weekend use by Parisians. The charge was 10s. per night, payable to the local police—whom we never saw.

Food and drink. At many camps, milk, bread, fruit and vegetables are brought to the site each morning by local retailers. In the camp shops, prices are usually lower than local town prices, though a little higher than village prices. We did the minimum amount of cooking—usually only a light evening meal and periodic brews of coffee—because there was so much good cold food to explore: bread of various colours, shapes and textures, cold meats in endless variety, abundant cheap fruit, cheese and wine. We avoided any shops with

other tourist cars nearby, which certainly helped to keep down our costs.

Countries. In France costs are noticeably higher in towns. Don't be afraid to haggle! In Paris the parking problem is insuperable: leave your car at the camp and go by Métro or bus. Watch out, when driving, for sudden patches of atrocious cobbled surface.

In Belgium do your best not to be mistaken for an American—shopkeepers regard them as fair game. Whatever your nationality, you are liable to be charged 16s. 6d. in Brussels for three pastries, two coffees and a Coca-Cola!

Prices compared

Dutch prices are comparable with our own, or a little lower. There is an almost embarrassing desire to be helpful to British tourists. Roads are excellent, standards of driving and traffic discipline very high.

In Germany we found conditions and prices very similar to those in Holland. Roads, as in Belgium, are either very good or very bad, and consistently so for miles on end.

After seeing Continental campers in action, there are one or two improvements we should like to make to our equipment—and next time we really must take a corkscrew! But even if you're amateurs, like us, camping abroad on a budget makes an ideal holiday. Why not go and buy a tent?

DAY 2 ACTUAL MILEAGE 61518-61689 30/AUG.			
BRUGGE	AUTO ROUTE	GENT	47 Km
GENT	AUTO ROUTE	BRUSSEL	53
BRUSSEL	N 2	LEUVEN	22
LEUVEN	N 2	DIEST	29
DIEST	N 21	HECHTEL	34
HECHTEL	N 15	EINDHOVEN	37
EINDHOVEN	VIA BEST	VEGHEL	24
PLANNED: 246 Km or 153 miles			
PETROL	15 Lt	130 Bfr OIL	1 Lt 2.50 6'ds
	20 Lt	21 6'ds	Fuel cap 1.75 6'ds

Daily route card, made out in advance as a check on motoring expenses. Note how actual mileage exceeded planned mileage by 18 miles



Gateway to Middle Temple, London

Photo by A. Walker, Cassel Works (General Chemicals Division)